

Egypt. Meteorological Dept.

Ministry of Public Works, Egypt. - Physical Department.

Report on the weather and state of the river.

1939-1944

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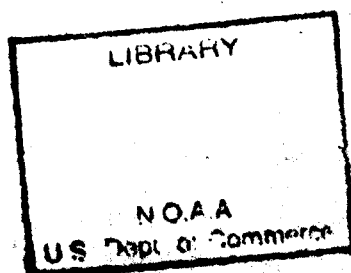
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Ministry of Public Works, Egypt.—Physical Department

REPORT ON THE WEATHER AND STATE OF THE RIVER FOR JANUARY, 1939

The Weather

Unusually mild by day, especially in the second half of the month. Scant rainfall.

At the beginning of the month the passage of a depression from the Aegean to the Black Sea caused fresh to strong southwest winds in Egypt. Anticyclonic conditions flowed with light northeasterly winds, early morning mists, mild days and rather cool nights.

On the 8th Egypt came under the influence of a depression situated over southern Greece, and winds blew from the south. This depression reached the coast of Syria by the 10th, and winds veered to the northwest, bringing heavy showers of rain near the coast. At Alexandria 18 millimetres fell.

Anticyclonic conditions were then established and prevailed until the 21st when a trough of low pressure extended from Italy to the eastern Mediterranean, and light showers occurred near the coast.

On the 24th a deep depression developed over Italy and its approach caused strong southerly winds in Egypt. At Salum the wind velocity reached 70 kilometres an hour on the 24th and 25th. There were again light showers along the coast, but the weather remained mild, and towards the end of the month the temperature rose steadily.

For the month as a whole atmospheric pressure was slightly above normal, except in Upper Egypt and the Sudan. Temperature in Egypt was everywhere above normal by day, especially in Middle Egypt, but except on the coast night temperatures were slightly below normal. The mean temperature was everywhere above normal. Rainfall in Egypt was negligible except on the Mediterranean coast, and there only a quarter of the usual amount fell. Morning mists were very frequent.

TABLE SHOWING THE DEPARTURE FROM NORMAL FOR JANUARY, 1939

DISTRICTS	BAROMETRIC PRESSURE		TEMPERATURE						RAINFALL	
			MAXIMUM		MINIMUM		MAX.+MIN. 2			
	1939	Difference from Normal	1939	Difference from Normal	1939	Difference from Normal	1939	Difference from Normal	1939	Difference from Normal
	m.b.	m.b.	°C.	°C.	°C.	°C.	°C.	°C.	mm.	mm.
I. Mediterranean ...	1018.9	+0.4	19.5	+1.2	10.6	+0.8	15.0	+1.0	9	-25
II. Lower Egypt ...	1019.5	+0.1	20.7	+0.8	6.2	-0.5	13.4	+0.2	2 14	-18 14
III. Middle Egypt ...	1019.8	+0.4	20.8	+1.8	7.5	-0.2	14.2	+0.8	0	-5
IV. Upper Egypt ...	1019.6	-0.1	22.3	+1.0	6.6	-0.4	14.4	+0.3	0	-
V. Western Desert ...	1020.6	+0.6	21.3	+0.1	5.2	+0.3	13.2	+0.2	0	-
VI. Red Sea (Egypt) ...	1018.0	-0.2	21.9	+0.2	10.6	-0.4	16.2	-0.1	0	-1
*VII. Red Sea (Sudan) ...	1014.8	-0.8	27.5	+0.4	20.2	+0.3	23.8	+0.4	5	-2
VIII. North Sudan ...	1014.9	-0.4	30.2	+0.2	13.6	+0.6	21.9	+0.4	0	0
IX. Central Sudan ...	1012.1	-1.3	33.2	+0.2	14.0	+1.1	23.6	+0.6	0	0
X. South Sudan ...	1010.4	-0.6	35.7	-0.5	18.9	+0.4	27.3	0.0	0	-1

*Port Sudan only.

L.J. SUTTON.
Director, Meteorological Service.

State of the River

Lake Albert at Butiaba fell 14 cms. during the month. Its level on February 1st, 1939 was 45 cms. above the normal but 12 cms. below that of the corresponding day of last year.

The Bahr el Jebel at Juba fell a little throughout the month. The levels were a few cms. above the normal, but a few cms. below those of last year.

The River Sobat at Nasser fell very rapidly. The levels were much above both the normal and those of last year.

The white Nile Malakal remained almost steady till the 20th, then fell faster than normal rate. The levels were much above both the normal and last year's.

The Blue Nile at Roseires and Khartoum and the Main Nile at Kajnarti fell at about normal rate. The levels were above both the normal and those of last year.

The differences of the mean levels in January 1939 from those of January 1938 and from the normal for 1906-1935 were :—

STATION	MEAN DIFFERENCES OF LEVELS	
	JANUARY 1939 Minus JANUARY 1938	JANUARY 1939 Minus Normal
	Metre	Metre
Juba	— 0·08	+ 0·09
Nasser	+ 3·08	+ 2·46*
Malakal	+ 1·65	+ 1·27
Roseires	+ 0·40	+ 0·68
Khartoum	+ 0·49	+ 0·31
Kajnarti	+ 0·64	+ 0·39

* Nasser normal is for 1922-1935 only.

Y.M. SEMAIKA.
Director, Hydrological Service

February missing

Ministry of Public Works, Egypt.—Physical Department

REPORT ON THE WEATHER AND STATE OF THE RIVER
FOR MARCH, 1939

The Weather

Abnormally cool during the first week, then warm and cool spells alternating.

At the beginning of the month the weather was unsettled owing to the presence of a depression over the eastern Mediterranean, and in Lower Egypt rain fell on several days. Cold air from southern Russia arrived in Egypt on the 5th and caused a pronounced drop in temperature. On the 7th the temperature in the Delta did not rise above 16° C, or 9° C. below the normal for the time of year; this day was the coldest March day for 10 years. The wind was frequently of gale force, and reached a velocity of 90 kilometres per hour at Helwân on the 7th. The cold current traversed Egypt and penetrated far into the Sudan.

Settled conditions followed and the weather by day became steadily warmer, but the nights remained cold, and at stations in the western desert the minimum temperature on the 8th and 9th was only 1 or 2° C. above freezing point.

The approach of a depression on the 11th and 12th brought strong southerly winds and a sharp rise in temperature. At Salûm a velocity of 99 kilometres per hour was reached. The heat wave broke abruptly on the 13th.

On the 19th shallow depressions approached from the western desert, causing wide-spread showers in advance.

A trough of low pressure extending from the central Mediterranean to the interior of Libia appeared on the 21st and moved eastwards at a speed of nearly 50 kilometres per hour. Southwesterly gales and cold weather prevailed throughout Lower Egypt during its passage. From the Fayûm across Cairo to Suez a heavy rainstorm, accompanied by strong southwest winds, took place during the night of the 21st, the amount registered being 10 millimetres. The velocity of the wind reached 100 kilometres per hour at Salûm on the 21st and 23rd, and 90 kilometres per hour at Alexandria on the 22nd.

On the 26th Egypt again came under the influence of depressions over the Mediterranean, and southeasterly winds gave rise to a heat wave which reached its peak (34° C., 94° F., in Cairo) on the 29th, when the passage of the depression brought northerly winds and a rapid fall in temperature.

For the month as a whole the barometric pressure was everywhere much below normal, while the temperature was slightly below normal in Egypt except on the Mediterranean coast, and above normal in the Sudan. Rainfall in Egypt was slightly above normal.

TABLE SHOWING THE DEPARTURE FROM NORMAL FOR MARCH, 1939

DISTRICTS	BAROMETRIC PRESSURE		TEMPERATURE						RAINFALL	
			MAXIMUM		MINIMUM		MAX. + MIN. 2			
	1939	Difference from Normal	1939	Difference from Normal	1939	Difference from Normal	1939	Difference from Normal	1939	Difference from Normal
	m.b.	m.b.	°C.	°C.	°C.	°C.	°C.	°C.	mm.	mm.
I. Mediterranean ...	1013.1	-2.8	21.3	+0.5	11.9	-0.2	16.6	+0.2	14	+ 2
II. Lower Egypt ...	1013.8	-2.4	23.4	-0.7	8.9	0.0	16.2	-0.1	6	0
III. Middle Egypt ...	1011.2	-2.1	21.4	+0.3	10.7	+0.2	17.6	+0.2	10	+ 6
IV. Upper Egypt ...	1014.3	-1.5	27.2	-0.8	11.1	+0.2	19.2	-0.3	1	—
V. Western Desert ...	1015.0	-1.3	26.5	-1.3	9.6	-0.1	18.0	-0.7	0	—
VI. Red Sea (Egypt) ...	1012.9	-1.7	24.6	-0.4	13.6	-0.4	19.1	-0.4	0	0
*VII. Red Sea (Sudan) ...	1012.0	-1.0	28.9	+0.2	22.6	+2.9	25.8	+1.6	1	0
VIII. North Sudan ...	1010.2	-1.5	35.9	+0.1	17.2	+0.3	26.6	+0.2	0	0
IX. Central Sudan ...	1007.7	-2.2	38.4	+0.8	17.7	+0.5	28.0	+0.6	0	- 1
X. South Sudan ...	1007.3	-1.9	37.7	-0.3	22.1	+0.7	29.9	+0.2	21	- 1

*Port Sudan only.

L. J. SUTTON,
Director, Meteorological Service.

State of the River

Lake Albert at Butiaba fell seven cms. during the month. Its level on April 1, 1939 was 46 cms. above the normal and 14 cms. below that of the corresponding day of last year.

The Bahr el-Jebel at Juba fell a little. The levels were a few cms. above the normal, but nearly identical with those of last year.

The River Sobat at Nasser fluctuated above the normal during the first fortnight and fell faster than normally until the 28th, then rose slightly for the last three days. The levels were above the normal throughout the month and above last year's until the fourteenth, but below them thereafter.

The White Nile at Malakal fell at about normal rate. The levels were above both the normal and those of last year.

The Blue Nile at Roseires fluctuated slightly. The levels were above the normal, throughout the month, but below those of last year during the third week and above them for the rest of the month; at Khartoum it fluctuated slightly until the 23rd, then rose to the end of the month owing to the emptying of Gebel Aulia Reservoir. The levels throughout the month were above the normal, below those of last year during the first fortnight and above them thereafter.

The Main Nile at Kajmarty fell rapidly during the first fortnight and little faster than normal rate during the second with a small rise at the end of the month. The level which was much higher than normal and last year's at the beginning of the month, became a few cms. above them at its end.

The differences of the mean levels in March 1939 from those of March 1938 and from the normal 1906-1935 were :—

STATION	MEAN DIFFERENCES OF LEVELS	
	March 1939 Minus March 1938	March 1939 Minus Normal
	Metre	Metre
Juba	— 0·01	+ 0·03
Nasser	+ 0·13	+ 0·36*
Malakal	+ 0·22	+ 0·27
Roseires	+ 0·13	+ 0·54
Khartoum	+ 0·07	+ 0·17
Kajmarty	+ 0·17	+ 0·39

* Nasser normal is for 1922-1935 only.

Y. M. SIMAIKA,
Director, Hydrological Service.

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Ministry of Public Works, Egypt.—Physical Department

REPORT ON THE WEATHER AND STATE OF THE RIVER
FOR APRIL, 1939.

The Weather

Slightly warmer than usual, with five heat waves.

At the beginning of the month north-easterly winds prevailed and the weather was cool. On the 3rd, depressions near Crete and in the western desert brought a rapid rise in temperature, but within two days the heat wave had broken, its passage being accompanied in places by thunderstorms, with light rain, both in Upper and Lower Egypt.

The weather then remained cool until the 9th, and on the following day southerly winds prevailed and the temperature in Cairo rose to 34°C. (93°F.). Subsequently with the formation of a ridge of high-pressure from Southern Europe to Western Egypt, cool northerly winds arrived and there was a very appreciable fall in temperature, the maximum in Cairo on the 13th being only 24°C. (75°F.). Pleasant weather followed, for some days. On the mornings of 17th and 18th there was thick fog in Cairo and the eastern parts of the Delta. On the 18th a depression was situated near Benghazi, and hot southerly winds traversed Egypt, but the depression passed on the following day and the temperature fell, but the break was of short duration, as the advance of a system of depressions along the Eastern Mediterranean brought severe khamisin conditions, and the temperature rose rapidly, culminating on the 23rd with temperatures of 38°C. (100°F.) at Salum and Matruh (15°C. above normal, a remarkably large departure for coastal stations); 35°C. (95°F.) at Alexandria, and 40°C. (104°F.) in Cairo. In the western desert sandstorms were severe; at Salum the wind velocity reached 100 kilometres per hour, and at times visibility there was almost nil. With the passage of the depression, the heat wave broke rapidly; light showers occurred in a few places both in Upper and Lower Egypt, and by the 26th the maximum temperature in Cairo was down to 25°C. (77°F.). There was a short and less intense heat wave towards the end of the month.

For the month as a whole barometric pressure was everywhere below normal, while temperature was above normal though only by small amounts.

Rainfall in Egypt was negligible.

TABLE SHOWING THE DEPARTURE FROM NORMAL FOR APRIL, 1939.

DISTRICTS	BAROMETRIC PRESSURE		TEMPERATURE						RAINFALL	
			MAXIMUM		MINIMUM		(MAX.+MIN. 2)			
	1939	Difference from Normal	1939	Difference from Normal	1939	Difference from Normal	1939	Difference from Normal	1939	Difference from Normal
	m.b.	m.b.	°C.	°C.	°C.	°C.	°C.	°C.	mm.	mm.
I. Mediterranean ...	1013.5	—0.7	23.4	+0.1	14.9	+0.5	19.2	+0.3	0	— 4
II. Lower Egypt ...	1013.5	—1.4	28.0	+0.1	11.9	+0.4	20.0	+0.2	0	— 4
III. Middle Egypt ...	1013.3	—1.1	29.2	+0.9	13.5	+0.3	21.4	+0.6	0	— 2
IV. Upper Egypt ...	1012.2	—1.5	32.7	0.0	15.0	+0.1	23.8	0.0	0	—
V. Western Desert ...	1013.3	—0.6	32.0	—0.3	14.4	+0.8	23.2	+0.2	0	—
VI. Red Sea (Egypt) ...	1011.2	—1.2	27.9	—0.1	17.2	+0.1	22.6	0.0	0	0
VII. Red Sea (Sudan) ...	1010.7	—0.4	31.4	—0.1	25.8	+4.4	28.6	+2.2	9	+ 8
VIII. North Sudan ...	1008.5	—0.9	39.7	+0.2	21.2	+0.7	30.4	+0.4	5	+ 4
IX. Central Sudan ...	1007.4	—0.7	40.0	—0.1	21.2	+0.9	30.6	+0.4	12	+ 8
X. South Sudan ...	1008.9	—0.4	35.1	—2.1	22.8	+0.4	29.0	—0.8	95	+24

only.

L. J. SUTTON,
Director, Meteorological Service.

State of the River

Lake Albert at Butiaba was steady during the month. Its level on May 1, 1939, was 47 cms. above the normal but 15 cms. below that of the corresponding day of last year.

The Bahr El Jebel at Juba remained steady and identical with the normal and last year's levels during the first eight days, then fluctuated above both the normal and last year's levels for the rest of the month with two peaks on the 9th and 22nd which were 50 cms. and 43 cms. respectively above the normal.

The River Sobat at Nasser fluctuated above both the normal and last year's levels reaching a peak on the 16th which was 86 cms. above the normal.

The White Nile at Malakal rose slightly during the first half of the month and faster than normal rate during the second half. The levels were much above both the normal and those of last year; at Gebel Aulia the River was almost steady until the 23rd and rose a little thereafter. The levels were also much above both the normal and those of last year.

The Blue Nile at Roseires rose sharply during the second week and fell steadily for the rest of the month. The levels were much above the normal and those of last year; at Khartoum it fell slightly during the first fortnight and then rose slightly for the rest of the month. The levels were above the normal but much above those of last year.

The Main Nile at Kajnarti rose slightly during the first week and rapidly during the second, then fell thereafter. The levels were much above both the normal and those of last year.

The differences of the mean levels in April 1939 from those of April 1938 and from the normal 1906-1935 were :—

STATION	MEAN DIFFERENCES OF LEVELS	
	April 1939 Minus April 1938	April 1939 Minus Normal
	Metre	Metre
Juba	+ 0.13	+ 0.10
Nasser	+ 0.51	+ 0.29*
Malakal	+ 0.26	+ 0.31
Roseires	+ 0.41	+ 0.51
Khartoum	+ 0.55	+ 0.29
Kajnarti	+ 0.65	+ 0.65

* Nasser normal is for 1922-1935 only.

Y. M. SIMAIKA,
Director, Hydrological Service.

Ministry of Public Works, Egypt.—Physical Department

REPORT ON THE WEATHER AND STATE OF THE RIVER FOR MAY, 1939.

The Weather

Abnormally hot. Record high temperatures for May were observed in many places but the mean temperature for the month did not reach that of May 1929.

On the 3rd a shallow depression appeared off Salum, and this was followed by the arrival of a deeper depression two days later. South-easterly winds prevailed and temperature rapidly rose from a maximum of 30°C. (86°F.) in Cairo on the first of the month to 43°C. (109°F.) on the 5th; this is 12°C. (22°F.) above normal. With the passage of the depression and the veering of the wind to the north-west, the temperature fell abruptly to normal, but such conditions did not persist. From the 8th to the 12th, during a period of north-easterly winds, the weather gradually became warmer, the temperature in Cairo rising to 40°C. (104°F.). The end of the heat wave was marked by a dust-storm in which the wind velocity at Helwan reached 78 kilometres per hour.

For a few days the weather remained pleasant and settled. In the morning of the 18th thick fog occurred in Cairo district and at places in the Delta; at Giza visibility at 6 h. was less than 50 metres.

The passage of a system of shallow depressions along the Eastern Mediterranean then gave rise to an intense heat wave, with southerly winds and khamisin conditions. The temperature reached 43°C. in Cairo on the 20th and 21st (10°C. above normal); at Alexandria 42°C. (15°C. above normal) on the 21st; at Salum 43°C. and at Mersa Matruh 44°C. (111°F.). This is 18°C. (32°F.) above normal. Such high temperatures along the Mediterranean coast are particularly remarkable and those for Salum and Matruh are records for May. The nights also were very hot and uncomfortable, and in Cairo that on the 21st was the hottest May night since 1921 at least.

The depressions finally passed on the evening of the 21st, and Egypt was then traversed by strong cool north-west winds, but after a day a depression appeared in the Libyan Desert, and with easterly winds and dust-storms prevailing, an unusual but exceptionally severe heat wave ensued. Coastal stations were little affected, the north-east winds from the sea keeping down the temperature there. Thus on the 23rd the maximum temperature at Helwan was 44°C. (111°F.) while that at Alexandria was only 26°C. (79°F.). The depression crossed Upper Egypt on the 24th and provided the hottest May day on record in many places. The following record high temperatures for May were established: Helwan, Baharia, Fayum, Asyut 47°C. (117°F.); Cairo and Minia 46°C. (115°F.). At Aswan and Wadi Halfa the temperatures on the 25th reached 48°C. and 49°C. (120°F.) respectively, equalling the records for May. With the passage of the depression and the arrival of north-west winds the weather rapidly became cool, and on the 28th the maximum temperature in Cairo was only 29°C. (84°F.). During the last three days of the month the weather became warmer, and slight thunderstorms occurred near the coast, while lightning was observed to the west of Cairo on the evening of the 29th.

For the month as a whole the mean atmospheric pressure was everywhere below normal, while, except in the extreme south of the Sudan, temperature was much above normal. Relative humidity in Cairo was much below normal. Rainfall was negligible in Egypt and about normal in the Sudan.

TABLE SHOWING THE DEPARTURE FROM NORMAL FOR MAY, 1939.

DISTRICTS	BAROMETRIC PRESSURE		TEMPERATURE						RAINFALL	
			MAXIMUM		MINIMUM		(MAX.+MIN./2)			
	1939	Difference from Normal	1939	Difference from Normal	1939	Difference from Normal	1939	Difference from Normal	1939	Difference from Normal
	m.b.	m.b.	°C.	°C.	°C.	°C.	°C.	°C.	mm.	mm.
I. Mediterranean ...	1013.3	-0.1	27.6	+1.7	18.6	+1.3	23.1	+1.5	tr.	- 2
II. Lower Egypt ...	1013.4	-0.6	33.5	+1.4	16.4	+1.0	25.0	+1.2	tr.	- 2
III. Middle Egypt ...	1012.7	-0.4	35.6	+3.4	18.3	+1.5	27.0	+2.4	tr.	- 1
IV. Upper Egypt ...	1010.9	-1.1	39.4	+3.1	21.1	+2.0	30.2	+2.6	tr.	-
V. Western Desert ...	1011.6	-0.7	38.9	+2.3	21.2	+3.0	30.0	+2.6	tr.	-
VI. Red Sea (Egypt) ...	1010.2	-0.9	32.7	+1.2	22.1	+1.0	27.4	+1.1	0	0
*VII. Red Sea (Sudan) ...	1009.4	-0.1	36.5	+1.5	—	—	—	—	0	- 1
VIII. North Sudan ...	1007.5	-1.1	42.6	+1.1	26.1	+2.0	34.4	+1.6	9	+ 4
IX. Central Sudan ...	1007.8	-0.9	39.6	-0.3	23.7	+1.2	31.6	+0.4	21	- 1
X. South Sudan ...	1009.8	-1.0	33.9	-1.0	22.4	+0.4	28.2	-0.3	111	-10

* Port Sudan only.

L. J. SUTTON,
Director, Meteorological Service.

State of the River

Lake Albert at Butiaba fell four cms. during the month. Its level on June 1st, 1939, was 38 cms. above the normal, but 17 cms. below that of the corresponding day of last year.

The Bahr el Jebel at Juba fluctuated about normal with two peaks on the 5th and 18th being 11 cms. and 26 cms. respectively above the normal. The levels on the average were 9 cms. below the normal and 6 cms. below last year's.

The River Sobat at Nasser rose at about normal rate during the first week and much faster than normal rate thereafter. The levels were above the normal and much above those of last year.

The White Nile at Malakal was steady during the first week, then rose faster than normal rate for the rest of the month. The levels were above both the normal and last year's. At Gebel Aulia, the head on the Dam was—from May the 14th—adjusted so as not to drop below 0·50 metre. On the downstream the river fell until the 22nd, then rose slightly till the end of the month. The levels were above both the normal and those of last year.

The Blue Nile at Roseires fluctuated above normal with four peaks recorded on the 14th, 23rd, 27th and 31st being 80 cms., 81 cms., 98 cms. and 39 cms. respectively above normal. The levels were above both the normal and those of last year. At Khartoum the Blue Nile fell steadily during the first ten days, then fluctuated with a tendency to rise till the end of the month. The levels were above the normal and much above those of last year.

The Main Nile at Kajnarti rose slightly during the first fortnight then fell thereafter. The levels were much above both the normal and those of last year.

The differences of the mean levels in May 1939 from those of May 1938 and from the normal 1906-1935 were :—

STATION	MEAN DIFFERENCES OF LEVELS	
	May 1939 minus May 1938	May 1939 minus Normal
	Metre	Metre
Juba	— 0·06	— 0·09
Nasser	+ 0·94	+ 0·59*
Malakâl	+ 0·37	+ 0·43
Roseires	+ 0·55	+ 0·43
Khartoum	+ 0·45	+ 0·21
Kajnarti	+ 1·02	+ 0·64

* Nasser normal is for 1922-1935 only.

Y. M. SIMAIKA,
Director, Hydrological Service.

Ministry of Public Works, Egypt.—Physical Department

REPORT ON THE WEATHER AND STATE OF THE RIVER FOR JUNE, 1939

The Weather

First half of the month, cool; second half, warm. Settled summer conditions were not established this year as early as usual.

On the 1st of the month the approach of a depression along the coast caused hot south-east winds in Egypt, the temperature in Cairo rising to 41° C. (106° F.) on that day. Following the rapid passage of the depression, which was accompanied by very light showers throughout Lower Egypt, north-westerly winds prevailed and there ensued a spell of unusually cool weather, which, except for small break on the 8th, lasted for nearly a fortnight. On several occasions in this period the maximum temperature did not exceed 31° C. (88° F.) in Cairo or 25° C. (77° F.) in Alexandria.

Egypt was again under the influence of a Mediterranean depression on the 17th and 18th, when khamsin conditions prevailed, with sandstorms in the western desert. The temperature in Cairo rose to 40° C. A short period of cool weather followed, but from 24th to the end of the month the weather became increasingly warmer, especially inland. For the last four days the temperature in Cairo exceeded 40° C. reaching 42° C. (108° F.) on 30th, and the nights also were hot and oppressive. Coastal stations were much cooler, the highest temperature at Alexandria during this period being 31° C. (88° F.) and at Port Said 34° C. (93° F.).

Thick fog occurred at Alexandria on the morning of the 29th, and visibility at times was less than fifty metres.

For the month as a whole the barometric pressure was below normal except in the western desert. The temperature was well below normal on the Mediterranean coast, in the Delta and the western desert, slightly below normal in Middle and Upper Egypt, and above normal in the Sudan. Rainfall in the Sudan was below normal, especially in the extreme south.

TABLE SHOWING THE DEPARTURE FROM NORMAL FOR JUNE, 1939.

DISTRICTS	BAROMETRIC PRESSURE		TEMPERATURE						RAINFALL	
			MAXIMUM		MINIMUM		(MAX. + MIN. ÷ 2)			
	1939	Difference from Normal	1939	Difference from Normal	1939	Difference from Normal	1939	Difference from Normal	1939	Difference from Normal
	m.b.	m.b.	°C.	°C.	°C.	°C.	°C.	°C.	mm.	mm.
I. Mediterranean ...	1011.7	-0.5	27.3	-0.9	19.7	-0.7	23.5	-0.8	0	0
II. Lower Egypt ...	1011.6	-0.4	33.3	-1.3	17.6	-0.7	25.4	-1.0	traces	0
III. Middle Egypt ...	1011.1	-0.5	34.8	-0.2	19.5	-0.1	27.2	-0.2	"	0
IV. Upper Egypt ...	1009.6	-0.4	38.4	-0.2	21.7	-0.2	30.0	-0.2	0	—
V. Western Desert ...	1011.2	+0.4	38.4	-0.8	20.7	-1.0	29.6	-0.9	0	—
VI. Red Sea (Egypt) ...	1008.2	-0.2	33.2	-0.4	23.5	-0.7	28.4	-0.6	0	0
*VII. Red Sea (Sudan) ...	1007.5	+0.8	39.2	+0.3	—	—	—	—	0	0
VIII. North Sudan ...	1008.2	0.0	41.9	+0.2	25.7	+0.4	33.8	+0.3	6	-4
IX. Central Sudan ...	1009.4	-0.2	38.1	-0.1	23.6	+0.8	30.8	+0.4	47	-2
X. South Sudan ...	1011.2	-0.5	32.4	-0.6	21.6	+0.5	27.0	0.0	106	-40

* Port Sudan only.

RAINFALL DATA FOR JUNE 1939

STATION	1939	Diff. from Normal	STATION	1939	Diff. from Normal
	mm.	mm.		mm.	mm.
Juba	85	- 55	Adis Ababa	114	- 21
Wau	175	+ 7	Roseires	72	- 56
Malakal	58	- 72	Wad Medani	60	+ 25
El Obeid	60	+ 22	Atbara	0	- 2
El Fasher	1	- 17	Kassala	23	- 7
Khartoum	Drops	- 9	Port Sudan	0	0

L. J. SUTTON,
Director, Meteorological Service.

State of the River

Lake Albert at Butiaba fell 7 centimetres during the month. Its level on July 1, 1939 was 28 centimetres above the normal but 22 centimetres below that of the corresponding day of last year.

The Bahr el Jebel at Juba rose with minor fluctuations until the 19th, then a deep fall set in, remaining for few days. This was followed by an unexpected abnormal peak recording 14·80 metres on the afternoon of the 23rd, the river however fell to its normal condition next morning and remained nearly steady to the end of the month.

The River Sobat at Nasser rose with slower than normal rate, the level which was 70 centimetres above normal at the beginning of the month, being 35 centimetres above it at the end. The levels were half a metre above last year's throughout.

The White Nile at Malakal rose steadily during the month, the levels being much above normal and those of last year.

The Blue Nile at Roseires showed that flood conditions are in the way of developing the red water has been reported to have passed there by the beginning of the month. The levels fluctuated during the first twenty days above both normal and last year's levels, during the last ten days the levels were well above normal but much below those of last year. At Khartoum, the Blue Nile rose almost normally, the level reached last year's at the end of the month though it was about half a metre higher at its beginning.

The River Atbara at Khashm el Girba started to rise quickly on the 18th, when the level was much below normal. The levels fluctuated about normal values during the last week of the month.

The Main Nile at Kajnarti showed a tendency to rise all over the month after the rapid fall which happened last month. The levels, on general, were much above both normal and last year's levels.

The differences of the mean levels in June 1939 from those of June 1938 and from the normal 1906-1935 were :—

STATION	MEAN DIFFERENCES OF LEVELS	
	June 1939 minus June 1938	June 1939 minus Normal
	Metre	Metre
Juba	— 0·20	— 0·10
Nasser	+ 0·59	+ 0·50*
Malakāl	+ 0·41	+ 0·47
Roseires	+ 0·07	+ 0·46
Khartoum	+ 0·38	+ 0·11
Khashm el Gibra... ..	—§	— 0·43
Kajnarti	+ 0·79	+ 0·33

* Nasser normal is for 1922-1935 only.

§ Khashm el Girba 1938 flood season started on July 1st.

Y. M. SIMAIKA,
Director, Hydrological Service

Ministry of Public Works, Egypt.—Physical Department.

REPORT ON THE WEATHER AND STATE OF THE RIVER.
FOR JULY, 1939.

The Weather

The usual summer settled conditions prevailed during the month, but hot days occurred in Middle Egypt during the second half of the month when the maximum temperature in Cairo reached 40° C. (104° F.) i.e. 5° C. above normal on several days. In fact the temperature was continuously above normal by day and night during that period, but the air was much drier than usual.

On the contrary the coast on the west enjoyed cool weather practically during the whole month, the maximum temperature at Alexandria and Matruh was on the average about half a degree less than the normal.

Barometric pressure was below the normal everywhere except the Western Oasis, Red Sea and South Sudan. The relative humidity at Alexandria was 4 per cent above normal, while in Cairo was 3 per cent below the normal. Fog was observed in the Delta on the morning of the 29th. The temperature exceeded the normal in Egypt except in the Western Desert, Upper Egypt and the Red Sea.

The Sudan rainfall was in excess in Central and South Sudan.

TABLE SHOWING THE DEPARTURE FROM NORMAL FOR JULY, 1939.

DISTRICTS	BAROMETRIC PRESSURE		TEMPERATURE						RAINFALL	
			MAXIMUM		MINIMUM		(MAX.+MIN./2)			
	1939	Difference from Normal	1939	Difference from Normal	1939	Difference from Normal	1939	Difference from Normal	1939	Difference from Normal
	m.b.	m.b.	°C.	°C.	°C.	°C.	°C.	°C.	mm.	mm.
I. Mediterranean ...	1009.2	-0.1	29.8	+0.2	22.9	+0.6	26.4	+0.4	0	0
II. Lower Egypt ...	1009.1	-0.3	34.9	-0.2	20.2	+0.6	27.6	+0.2	0	0
III. Middle Egypt ...	1009.0	0.0	36.1	+0.5	21.8	+0.6	29.0	+0.6	0	0
IV. Upper Egypt ...	1007.8	-0.2	38.3	-0.3	23.4	+0.4	31.0	0.0	0	—
V. Western Desert ...	1010.1	+0.9	38.8	-0.3	22.1	0.0	30.4	-0.2	0	—
VI. Red Sea (Egypt) ...	1006.0	-0.2	34.0	-0.2	24.9	0.0	29.4	-0.1	0	0
*VII. Red Sea (Sudan) ...	1005.9	+0.5	41.4	+0.5	28.4	+0.3	34.9	+0.4	drops	— 5
VIII. North Sudan ...	1008.5	-0.1	39.7	+0.1	25.3	+0.6	32.5	+0.4	31	— 11
IX. Central Sudan ...	1010.6	-0.4	34.8	-0.1	22.9	+1.0	28.8	+0.4	144	+ 18
X. South Sudan ...	1012.4	+0.1	30.6	-0.8	21.2	+0.6	25.9	-0.1	177	+15

* Port Sudan only.

RAINFALL DATA FOR JULY 1939

STATION	1939	Diff. from Normal	STATION	1939	Diff. from Normal
	mm.	mm.		mm.	mm.
Juba ...	141	+18	Adis Ababa ...	193	-85
Wau ...	109	—	Roseires ...	108	-78
Malakal ...	202	+27	Wad Medani ...	236	+99
El Obeid ...	93	-6	Athara ...	28	+9
El Fasher ...	190	+80	Kassala ...	76	-15
Khartoum ...	18	-33	Port Sudan ...	Drops	-5

MAHD. HAMID MOHD.
A/Director, Meteorological Service.

State of the River

Lake Albert at Butiaba was almost steady during the month. Its level on August 1st was 27 centimetres above the normal but 26 centimetres below that of the corresponding day of last year.

The Bahr el Jebel at Juba fluctuated slightly below both normal and last year's. During the last week, the levels were much below those of last year.

The River Sobat at Nasser rose slower than normally, the level which was 35 centimetres above the normal at the beginning of the month, became only 14 centimetres above it at the end.

The White Nile at Malakal rose above both normal and last year's levels during the whole month. At Gebel Aulia, regulation on the dam started on the 5th, the levels D.S. were much below normal and last year's during the whole month.

The Blue Nile at Roseires started the month with steady rise which brought the levels on the 5th and 6th much above normal and few centimetres above those of last year. A rapid fall set in afterwards until the 8th when the level was almost normal. Levels remained slightly above normal until the 20th. This was followed however by minor fluctuations below normal and much below those of last year until the 31st, when the level was about 0.50 metre below normal and 2.20 metres below that of the corresponding day of last year. At Khartoum the levels fluctuated almost normally during the first half of the month and rose steadily below it during the second half, the levels in general were much below those of last year.

The River Atbara at Khashm el Girba, with the exception of few days during the month, was continuously below normal, and in general 15 centimetres below those of last year.

The Main Nile at Kajnarti, during the first fortnight, rose almost normally and was much above last year's. During the second fortnight, the River rose below both normal and last year's levels.

The differences of the mean levels in July 1939 from those of July 1938 and from the normal 1906-1935 were :—

STATION	MEAN DIFFERENCES OF LEVELS	
	July 1939 minus July 1938	July 1939 minus Normal
	Metre	Metre
Juba	— 0.27	— 0.13
Nasser	+ 0.08	+ 0.19*
Malakal	+ 0.17	+ 0.28
Roseires	— 1.27	+ 0.13
Khartoum	— 0.66	— 0.24
Khashm el Girba... ..	— 0.15	— 0.25
Kajnarti	— 0.08	— 0.29

* Nasser normal is for 1922-1935 only.

H. HARIDI,
A Director, Hydrological Service.

Ministry of Public Works, Egypt.—Physical Department.

REPORT ON THE WEATHER AND STATE OF THE RIVER FOR AUGUST, 1939.

The Weather

The weather of August was as usual free from any disturbances. There were no large departures from normal conditions except during the second week when the maximum temperature in Cairo rose to 39° C. on two successive days, the 10th and 11th, being 4° C. above normal.

The night temperature in Cairo and Alexandria was continuously above normal practically the whole month.

On the 27th a shallow depression appeared near Crete moving eastwards, winds on the coast went round to the south-west and the weather became rather warm. The thermometer in Cairo rose to 37° C. Subsequent to the passage of the depression the weather became cooler and the maximum temperature fell to 33° C. on the 30th.

For the month as a whole the mean atmospheric pressure was above normal everywhere except in Central and South Sudan. While the temperature was slightly above normal on the coast and Middle Egypt. The Sudan rainfall was above the average in Central Sudan and below the average elsewhere.

TABLE SHOWING THE DEPARTURE FROM NORMAL FOR AUGUST, 1939.

DISTRICTS	BAROMETRIC PRESSURE		TEMPERATURE						RAINFALL	
			MAXIMUM		MINIMUM		(MAX.+MIN./2)			
	1939	Difference from Normal	1939	Difference from Normal	1939	Difference from Normal	1939	Difference from Normal	1939	Difference from Normal
	m.b.	m.b.	°C.	°C.	°C.	°C.	°C.	°C.	mm.	mm.
I. Mediterranean ...	1010.2	+0.4	30.6	+0.3	23.5	+0.6	27.0	+0.4	drops	0
II. Lower Egypt ...	1010.2	+0.1	34.1	—0.9	20.1	+0.1	27.1	—0.4	0	0
III. Middle Egypt ...	1010.1	+0.5	35.4	+0.3	21.8	+0.3	28.6	+0.3	0	0
IV. Upper Egypt ...	1009.0	+0.5	37.8	—0.3	23.1	0.0	30.4	—0.2	0	—
V. Western Desert ...	1011.1	+1.5	38.6	—0.3	21.8	+0.2	30.2	0.0	drops	—
VI. Red Sea (Egypt) ...	1007.2	+0.7	34.5	—0.1	25.6	+0.2	30.0	0.0	0	0
*VII. Red Sea (Sudan) ...	1006.9	+0.9	40.1	—0.6	29.1	+0.4	34.6	—0.1	drops	—4
VIII. North Sudan ...	1009.3	+0.1	38.8	+0.3	25.2	+0.8	32.0	+0.6	62	—1
IX. Central Sudan ...	1011.0	—0.2	33.2	—0.2	21.8	+0.5	27.5	+0.2	179	+29
X. South Sudan ...	1012.2	—0.1	31.1	—0.1	21.0	+0.4	26.0	+0.2	156	—19

* Port Sudan only.

RAINFALL DATA FOR AUGUST 1939

STATION	1939	Diff. from Normal	STATION	1939	Diff. from Normal
	mm.	mm.		mm.	mm.
Juba ...	122	—4	Adis Ababa ...	327	+36
Wau ...	274	+62	Roseires ...	362	+139
Malakal ...	71	—114	Wad Medani ...	113	—31
El Obeid ...	114	—8	Athara ...	18	—19
El Fasher ...	89	—49	Kassala ...	180	+56
Khartoum ...	42	—34	Port Sudan ...	Drops	—4

MAHD. HAMID MOHD.

A/Director, Meteorological Service.

State of the River

Lake Albert at Butiaba rose seven centimetres during the month. Its level on September 1, 1939, was 27 centimetres above the normal but 32 centimetres below that of the corresponding day of last year.

The Bahr el Jebel at Juba fluctuated below normal, and much lower than last year's levels.

The River Sobat at Nasser rose at normal rate. The levels were a little above the normal and last year's until the 12th and below them thereafter.

The White Nile at Malakal rose at about normal rate. The levels were few centimetres above both the normal and those of last year.

The Blue Nile at Roseires fluctuated below normal until the 19th and about it until the 25th and below it thereafter. With the exception of the 20th, 21st and 24th, the levels were below the normal and much lower than those of last year; at Khartoum the Blue Nile rose at about normal rate till the 29th then fell for the last two days. The levels were below the normal and much lower than last year's.

The River Atbara at Khashm el Girba fluctuated below normal until the 24th, rose on the 25th above the normal and remained steady till the end of the month. Except for the last week the levels were below the normal and much lower than those of last year.

The Main Nile at Kajnarti rose at about normal rate. The levels were below normal and much lower than last year's.

The River in general during August was below both the normal and last year.

The differences of the mean levels in August 1939 from those of August 1938 and from the normal 1906-1935 were :—

STATION	MEAN DIFFERENCES OF LEVELS	
	August 1939 minus August 1938	August 1939 minus Normal
	Metre	Metre
Juba	— 0·67	— 0·30
Nasser	— 0·05	— 0·04*
Malakāl	+ 0·04	+ 0·11
Roseires	— 1·98	— 0·63
Khartoum	— 1·21	— 0·92
Khashm el Girba... ..	— 1·00	— 0·33
Kajnarti	— 2·95	— 1·08

* Nasser normal is for 1922-1935 only.

H. HARIDI,
A/Director, Hydrological Service.

Ministry of Public Works, Egypt.—Physical Department.

REPORT ON THE WEATHER AND STATE OF THE RIVER
FOR SEPTEMBER, 1939.

The Weather

Slightly warmer than usual during the first half of the month ; abnormally hot during the second half.

During the passage of a small depression on the 5th of the month, the temperature in Cairo rose to 40° C. (104° F.), but then fell rapidly, and normal settled conditions were established and maintained until the 19th, when a heat wave of extraordinary intensity and persistence began. The weather became steadily warmer until the 23rd, when there was a slight break. On the 25th Egypt was under the influence of a low-pressure system situated over southern Asia Minor, which caused southerly winds to prevail in Lower and Middle Egypt, giving rise to unusually hot weather for the time of year. The temperature reached 41·4° C. (106·5° F.) in Cairo (Ezbekia), equalling the record for the month set up in 1910, and 42·3° C. (108·1° F.) at Giza. With the passage of this system the heat wave weakened, but the approach of a deep depression along the eastern Mediterranean, combined with a secondary off the African coast, rapidly caused a return and intensification of the heat. Southerly winds again prevailed, and in the Western Desert reached gale force, giving rise to severe sand storms. At Salum a wind velocity of 95 kilometres per hour was recorded on the 28th. General conditions were essentially similar to those of Khamsin weather of early summer. The temperature reached 40° C. at Alexandria while in many localities record high temperatures for September were established on the 28th or 29th, such as 43° C. (109° F.) in Cairo, Fayûm and Asyût. By the following day the main depression had reached Northern Syria and cool air from the north-west traversed Egypt, bringing a great fall of temperature, the maximum in Cairo on that day being 31° C. (88° F.), which is the normal for the time of year.

For the month as a whole the barometric pressure was slightly below normal in Egypt except in the Western Desert and above normal in the Sudan. Except in the Central and Southern Sudan the temperature was everywhere above normal, particularly in Middle and Upper Egypt. In the Central and Southern Sudan rainfall was above normal.

It may be mentioned that a similar remarkable spell of hot weather in the last week of September occurred ten years ago. On that occasion the heat wave was slightly more intense in Lower Egypt, as the following values of the maximum temperature show :—

	September 1939	Previous September Record
Alexandria	40°C.	41°C. in 1929
Port Said	37	40 „ 1929
Tanta	41	42 „ 1929
Ezbekia	43	41 „ 1910
Giza	43	43 „ 1929
Helwan	41	42 „ 1929
Asyût	43	42 „ 1902
Aswân	44	47 „ 1902, 25, 30.

The mean temperatures by districts for September 1929 and 1939 compare as follows :

	1929	1939	Normal
Mediterranean Coast	27·0°C.	26·6°C.	25·7°C.
Lower Egypt	26·8	26·5	25·8
Middle Egypt	27·4	27·7	26·0
Upper Egypt	29·9	30·2	28·2

TABLE SHOWING THE DEPARTURE FROM NORMAL FOR SEPTEMBER, 1939.

DISTRICTS	BAROMETRIC PRESSURE		TEMPERATURE						RAINFALL	
			MAXIMUM		MINIMUM		(MAX.+MIN.)			
	1939	difference from Normal	1939	Difference from Normal	1939	Difference from Normal	1939	Difference from Normal	1939	Difference from Normal
	m.b.	m.b.	°C.	°C.	°C.	°C.	°C.	°C.	mm.	mm.
I. Mediterranean	1012·9	—0·3	30·7	+1·2	22·5	+0·6	26·6	+0·9	0	0
II. Lower Egypt	1013·0	—0·2	34·2	+1·2	18·8	+0·3	26·5	+0·8	0	0
III. Middle Egypt	1012·8	0·0	34·9	+2·5	20·6	+0·8	27·8	+1·6	0	0
IV. Upper Egypt	1011·2	—0·1	38·0	+2·6	22·3	+1·2	30·2	+1·9	0	0
V. Western Desert	1012·9	+0·3	38·5	+2·2	20·9	+1·1	29·7	+1·6	0	0
VI. Red Sea (Egypt)	1009·7	+0·1	33·3	+0·8	24·2	+0·4	28·8	+0·6	0	0
*VII. Red Sea (Sudan)	1008·7	+0·4	38·8	+1·0	27·5	+1·2	33·2	+1·1	0	0
VIII. North Sudan	1010·0	+0·6	39·9	+0·3	25·3	+0·8	32·6	+0·6	17	— 4
IX. Central Sudan	1011·1	+0·4	34·3	—1·1	21·6	+0·4	28·0	—0·4	98	+22
X. South Sudan	1011·8	+0·1	31·9	—0·8	21·2	+0·5	26·6	—0·2	211	+73

* Port Sudan only.

RAINFALL DATA FOR SEPTEMBER 1939

STATION	1939	Diff. from Normal	STATION	1939	Diff. from Normal
	mm.	mm.		mm.	mm.
Juba	130	+ 19	Adis Ababa	135	— 56
Wau	216	+ 49	Roseires	156	— 1
Malakal	288	+150	Wad Medani	50	— 11
El Obeid	110	+ 34	Atbara	1	— 5
El Fasher	121	+ 87	Kassala	34	— 24
Khartoum	27	+ 8	Port Sudan	0	0

L. J. SUTTON,
Director, Meteorological Service.

State of the River

Lake Albert at Butiaba was almost steady during the month. Its level on October 1, 1939, was 17 cms. above the normal but 39 cms. below that of the corresponding day of last year.

The Bahr el Jebel at Juba was considerably below both normal and last year's levels throughout the month. The levels were almost steady during the month but dropped suddenly on the 30th.

The River Sobat at Nasser continued its rise slowly for the first 10 days and quickly afterwards. Its levels which were below normal at the beginning of the month, were a few cms. above it by its end.

The White Nile at Malakal started the month with a level 5 cms. above normal and ended by 3 cms. below it. The levels were in general, identical with those of last year. At Gebel Aulia, regulation on the dam continued until the 20th bringing the level of the Reservoir down to 375.72 metres which was almost maintained till the end of the month. The levels D.S. were much below both normal and those of last year.

The Blue Nile at Roseires, after fluctuating below normal by the beginning of the month, fell rapidly and steadily till the 11th when the level was more than one metre below normal and about 2 metres lower than that of last year. This was followed, however, by a favourable rise maintaining until the 22nd when the level was above normal, then fell afterwards reaching the normal by the end of the month. At Khartoum the River reflected the general feature at Roseires and the levels were much below normal and last year's levels.

The River Atbara at Khashm el Girba fell almost normally during the month, the levels were on general about normal and more than half a metre below those of last year.

On the Main Nile at Kajnarti, the crest of the flood passed on the beginning of the month, being 16 cms. above normal and about 2 metres below that of last year. The River fell rapidly and steadily afterwards, with the exception of a few days during the second week when the levels were almost steady. It reached a level more than half a metre below normal at the end of the month.

The differences of the mean levels in September 1939 from those of September 1938 and from the normal 1906-1935 :—

STATION	MEAN DIFFERENCES OF LEVELS	
	September 1939 minus September 1938	September 1939 minus Normal
	Metre	Metre
Juba	— 0.62	— 0.30
Nasser	— 0.24	— 0.08*
Malakāl	— 0.03	+ 0.03
Roseires	— 1.55	— 0.39
Khartoum	— 1.22	— 0.51
Khashm el Girba... ..	— 0.58	+ 0.02
Kajnarti	— 2.45	— 0.67

* Nasser normal is for 1922-1935 only.

Y. M. SIMAIKA,
Director, Hydrological Service.

Ministry of Public Works, Egypt.—Physical Department.

REPORT ON THE WEATHER AND STATE OF THE RIVER FOR THE MONTH OF OCTOBER 1939

The Weather

Very warm, particularly during the second half. On the Mediterranean coast, this month, together with the corresponding month of October 1932, was the warmest October for thirty years at least. In Middle Egypt (Cairo area) the weather on the whole was not so warm as in October 1936 or 1932, but, with the exception of these two years, it was the warmest October since 1918. No record high temperatures were registered, but the temperature was almost continuously above normal.

During the first week high pressure was maintained over the western desert, with pressure decreasing towards the northern Red Sea; winds were chiefly north-easterly and the weather rather warm and damp. With the passage of a depression from the Bulkans towards northern Iraq on the 10th, cooler air from the north arrived in Egypt causing a gradual fall in temperature, which on the 15th had fallen to the normal value for the time of year. Then began an unusually intense and prolonged spell of hot weather.

A trough of low pressure extending from the northern Red Sea towards Cyprus persisted for several days, causing hot damp north-easterly winds to prevail over Lower Egypt. Heavy clouds formed, and lightning was seen to the east of Cairo on the 19th; very light showers occurred in a few localities. The heat wave reached its maximum intensity on the 21st, when a shallow depression was situated over Upper Egypt, and with a south-east wind the temperature in Cairo reached 37°C. (99°F.). Sharp showers took place in Upper Egypt, and light showers elsewhere. The weather then became somewhat cooler but temperatures were still abnormally high, and so remained until the end of the month. Dense morning fogs were frequent in several districts in Lower Egypt during the last week. On the 29th the fog was so thick in Alexandria district that visibility at one time fell below fifty metres.

For the month as a whole the barometric pressure was below normal throughout Egypt and the Sudan, and the temperature everywhere above normal. Rainfall was below normal in Egypt, above in the North and Central Sudan, and slightly below in the Southern Sudan.

TABLE SHOWING THE DEPARTURE FROM NORMAL for October, 1939.

DISTRICTS	BAROMETRIC PRESSURE		TEMPERATURE						RAINFALL	
			MAXIMUM		MINIMUM		(MAX. + MIN. 2)			
	1939	Difference from Normal	1939	Difference from Normal	1939	Difference from Normal	1939	Difference from Normal	1939	Difference from Normal
	m.b.	m.b.	°C.	°C.	°C.	°C.	°C.	°C.	mm.	mm.
I.—Miterranean ...	1015·4	—0·7	29·4	+1·5	21·6	+1·9	25·5	+1·7	drops	—6
II.—Lower Egypt ...	1015·5	—1·0	31·7	+1·2	17·8	+1·5	24·8	+1·4	1	—3
III.—Middle Egypt ...	1015·0	—1·0	32·2	+2·3	19·1	+1·6	25·6	+2·0	drops	—2
IV.—Upper Egypt ...	1013·4	—1·3	34·8	+2·2	20·5	+2·2	27·6	+2·2	1	—
V.—Western Desert	1015·2	—0·2	34·3	+1·1	18·2	+1·6	26·2	+1·4	0	—
VI.—Red Sea (Egypt)	1012·1	—1·4	31·0	+1·0	22·0	+1·6	26·5	+1·3	4	+4
VII.—Red Sea (Sudan)*	1011·4	—0·4	35·5	+1·7	25·9	+1·3	30·7	+1·5	4	—9
VIII.—North Sudan ...	1009·2	—1·1	39·8	+0·7	24·6	+1·9	32·2	+1·3	8	+4
IX.—Central Sudan ...	1008·7	—1·1	37·0	—0·5	21·6	+0·9	29·3	+0·2	31	+15
X.—South Sudan ...	1009·6	—1·2	33·5	—0·5	21·3	+0·5	27·4	0·0	90	—10

* Port Sudan only.

L. J. SUTTON,
Director, Meteorological Service.

State of the River

Lake Albert at Butiaba fell 9 cms. during the month. Its level on November 1st, 1939, was almost normal but 58 cms. below that of the corresponding day of last year.

The sudden fall which set in the Bahr el Jebel at Juba at the end of the last month, continued until the 4th, the River fluctuated slightly afterwards to the end of the month. The levels were much below both the normal and last year's throughout.

The River Sobat at Nasser rose nearly at normal rate. The levels were well below those of last year but identical to the normal.

The White Nile at Malakal rose 7 cms. during the month. The levels were a few cms below normal but on general about 30 cms. below those of last year.

The fall of the Blue Nile at Roseires which started on the 23rd of last month continued till the 11th, when the level was 77 cms. below normal and more than two metres below the corresponding day of last year. This fall was followed however by an abnormal rise extending to the 23rd when the level reached 2.24 metres above normal resulting a discharge of about 300 million cubic metres per day or double the normal value. The level fell rapidly afterwards to the end of the month, when it was still well above normal. At Khartoum the levels showed the same characteristics reaching the maximum on the 27th but fell more rapidly afterwards due to the filling of Sennar Reservoir.

The River Atbara at Khashm el Girba with the exception of the period 21-29 when the levels were above normal, the river on general was identical with the normal but well below last year's.

The Main Nile at Kajarti fell rapidly and steadily until the 24th. After this date the river was almost steady. The level which was 39 cms. below normal at the beginning of the month was 110 cms. below it at the end. The levels were on general much below those of last year.

The differences of the mean levels in October 1939 from those of October 1938 and from the normal 1906-35 were :—

STATION	MEAN DIFFERENCES OF LEVELS	
	October 1939 minus October 1938	October 1939 minus Normal
	Metre	Metre
Juba	— 0.77	— 0.56
Nasser	— 0.27	— 0.01*
Malakal	— 0.27	— 0.07
Roseires	— 1.12	+ 0.35
Khartoum	— 1.39	— 0.45
Khashm el Girba	— 0.31	+ 0.19
Kajarti	— 2.66	— 0.89

* Nasser Normal is for 1922-35 only.

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REPORT ON THE WEATHER AND STATE OF THE RIVER
FOR THE MONTH OF NOVEMBER 1939

The Weather

Little difference from average conditions.

At the beginning of the month Egypt was under the influence of low pressure over the eastern Mediterranean. Winds were mainly southerly and the weather mild. On the 7th a depression appeared off the coast of Egypt; passing over Lower Egypt, it gave rise to unsettled weather lasting for nearly a week. The wind velocity at Salum reached 80 kilometres per hour on the 8th, and very heavy rain fell. By the following day the depression was over Sinai and the northern Red Sea. Northerly winds prevailed and the weather became much cooler. During this period rain was general throughout Lower and Upper Egypt; it was particularly heavy near Suez and over the northern Red Sea, and also along the coast west of Alexandria, amounting to 44 millimetres at Suez, 42 millimetres at Hurghada and 23 millimetres at Salum, Matruh, and Dabaa.

Anticyclonic conditions followed; winds were mainly northeasterly, and the weather mild, with early morning mists. Conditions again became unsettled, on 18th and 19th, when there were light showers in Lower and Middle Egypt. The wind velocity reached 76 kilometres per hour at Alexandria on the 19th. The weather then improved, and a fine spell lasted until the 25th, when a depression arrived near Crete. Its passage to Syria resulted in cool and unsettled weather in Egypt, with winds of gale force over the eastern Mediterranean. For several days the weather remained cool and showery, but except along the coast east of the Delta, rainfall was very light..

For the month as a whole the barometric pressure was below normal in Egypt, except in the western desert, and slightly above normal in the Sudan. Except on the Mediterranean coast and near Cairo the temperature was below normal in all districts, though only by small amounts. Humidity was well below normal in Alexandria and Cairo. Rainfall was below normal in Lower Egypt, but considerably above normal in Middle Egypt and the northern Red Sea, owing to the heavy storms of the 9th and 10th. In the southern Sudan rainfall was much above normal.

TABLE SHOWING THE DEPARTURE FROM NORMAL FOR NOVEMBER, 1939.

DISTRICTS	BAROMETRIC PRESSURE		TEMPERATURE						RAINFALL	
			MAXIMUM		MINIMUM		(MAX.+MIN./2)			
	1939	Difference from Normal	1939	Difference from Normal	1939	Difference from Normal	1939	Difference from Normal	1939	Difference from Normal
	m.b.	m.b.	°C.	°C.	°C.	°C.	°C.	°C.	mm.	mm.
I.—Mediterranean ...	1016.6	—0.9	25.2	+0.6	16.6	+0.3	20.9	+0.4	20	— 2
II.—Lower Egypt ...	1017.0	—0.8	26.1	—0.5	12.8	—0.5	19.4	—0.5	5	— 3
III.—Middle Egypt ...	1017.0	—0.5	26.0	+0.1	13.5	—0.6	19.8	—0.2	13	+10
IV.—Upper Egypt ...	1016.6	—0.4	27.9	—0.5	13.7	+0.1	20.8	—0.2	3	—
V.—Western Desert...	1018.4	+0.9	23.9	—1.3	12.4	0.0	19.6	—0.6	0	—
VI.—Red Sea (Egypt)	1014.9	—0.0	26.4	—0.7	16.9	+0.4	21.6	—0.2	17	+14
VII.—Red Sea (Sudan)*	1013.6	+0.1	32.1	+1.1	24.4	+0.8	28.2	+1.0	29	—16
VIII.—North Sudan ...	1012.9	+0.4	34.4	—0.7	19.1	+0.3	26.8	—0.2	drops	0
IX.—Central Sudan ...	1011.4	+0.8	35.1	—1.0	17.6	+0.1	26.4	—0.4	drops	— 1
X.—South Sudan ...	1010.4	0.0	34.5	—1.0	19.7	—0.1	27.1	—0.6	42	+23

* Port Sudan only.

L. J. SUTTON,
Director, Meteorological Service.

State of the River

Lake Albert at Butiaba rose 4 cms. during the month. Its level on December 1st, 1939 was identical with the normal but 54 cms. below the corresponding day of last year.

At Juba, the Bahr el Jebel remained almost steady for the first 19 days, then rose slowly till the 22nd and remained almost steady till the end of the month. The levels were much below both normal and last year's.

The River Sobat at Nasser was almost steady during the first fortnight, then started its characteristic annual fall, the levels being identical with the normal but about half a metre below those of last year.

The White Nile at Malakal maintained its steady levels during the whole month. The levels were on the average a few cms. below normal but much below those of last year throughout.

At Roseires, with the exception of few days when the levels were almost steady, the Blue Nile fell steadily during the month, the levels were on general much above normal but below those of last year. At Khartoum the levels were above normal during the first 2 days of the month and below it thereafter, the levels were considerably below those of last year throughout the month.

The River Atbara at Khashm el Girba fell much slower than normal rate up till the 22nd, when the level was about 30 cms. above normal and 14 cms. above that of last year. The river fell more rapidly afterwards to the end of the month.

At Kajarti the Main Nile reflected the abnormal high levels of the Blue Nile which were recorded during the last month. The levels rose quickly during the early days of the month reaching a prominent peak on the 5th which was only few cms. below last year's record and about one metre above the normal. The River fell gradually afterwards to the end of the month when the level was 18 cms. below normal.

At Aswan the amount of water which arrived the Reservoir on the 9th was about 365 mills. m³ or 26 per cent more than the normal value.

The differences of the mean levels in November 1939 from those of November 1938 and from the normal 1906-1935 were :—

STATION	MEAN DIFFERENCES OF LEVELS	
	November 1939 minus November 1938	November 1939 minus Normal
	Metre	Metre
Juba	— 0·52	— 0·45
Nasser	— 0·53	+ 0·01*
Malakal	— 0·35	— 0·05
Roseires	— 0·29	+ 0·56
Khartoum	— 0·45	— 0·12
Khashm el Girba	— 0·05	+ 0·14
Kajarti	— 0·73	+ 0·12

* Nasser normal is for 1922-35 only.

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REPORT ON THE WEATHER AND STATE OF THE RIVER
FOR THE MONTH OF DECEMBER 1939

The Weather

Mild and dry.

At the beginning of the month the weather was settled, with light northerly winds. The passage of a shallow depression off the Delta on the 5th resulted in warm weather with winds from the south. On the morning of the 7th and 8th there was thick fog at several places in the Delta.

A shallow depression arrived north of Egypt on the 9th, causing moderate northwest wind, some cloud, and light rain on the coast on the following day. Anticyclonic conditions with mild weather were then established, and were maintained until the end of the third week, when a depression centred near Cyprus gave rise to strong northwesterly winds in Egypt, with cool showery weather. Rain was general along the coast, and was particularly heavy at Mersa Matruh on the 21st, when 32 millimetres were recorded.

Conditions improved on the 24th, when high pressure was established over Egypt. On the 26th and 27th the nights were very cool, and ground frost was observed at Giza on both these mornings.

On the following day a deep and extensive depression appeared over the central Mediterranean, resulting in fresh southerly winds throughout Egypt. At Salum a velocity of 88 kilometres per hour was reached. The weather was unusually warm; at Alexandria the temperature on the 29th reached 27° C (81° F), which is 8° C above the normal for the time of year.

For the month as a whole, atmospheric pressure and temperature were both above normal. On only two occasions in the month did the day temperature in Cairo fall below the normal. Relative humidity in Cairo and Alexandria was much below normal. Rainfall was everywhere below normal.

TABLE SHOWING THE DEPARTURE FROM NORMAL FOR DECEMBER, 1939.

DISTRICTS	BAROMETRIC PRESSURE		TEMPERATURE						RAINFALL	
			MAXIMUM		MINIMUM		(MAX.+MIN. 2)			
	1939	Difference from Normal	1939	Difference from Normal	1939	Difference from Normal	1939	Difference from Normal	1939	Difference from Normal
	m.b.	m.b.	°C.	°C.	°C.	°C.	°C.	°C.	mm.	mm.
I.—Mediterranean ...	1019·8	+1·7	21·7	+1·4	12·7	+0·9	17·2	+1·2	19	—14
II.—Lower Egypt ...	1020·6	+1·9	22·7	+1·0	8·8	0·0	15·8	+0·5	1	— 8
III.—Middle Egypt ...	1020·8	+1·8	22·8	+1·9	10·0	+0·3	16·4	+1·1	drops	— 4
IV.—Upper Egypt ...	1020·5	+1·4	24·8	+1·9	9·5	+0·6	17·2	+1·2	drops	—
V.—Western Desert...	1021·2	+1·8	23·8	+1·7	6·9	+0·4	15·4	+1·0	0	—
VI.—Red Sea (Egypt)	1019·2	+1·8	23·9	+0·4	13·1	+0·7	18·6	+0·6	drops	— 2
VII.—Red Sea (Sudan)*	1016·8	+1·6	30·0	+1·6	22·5	+1·1	26·2	+1·4	18	— 8
VIII.—North Sudan ...	1015·4	+0·5	32·9	+1·8	16·5	+2·	24·7	+2·0	0	0
IX.—Central Sudan ...	1013·1	+0·2	34·5	+1·0	15·6	+2·1	25·0	+1·6	0	0
X.—South Sudan ...	1010·6	—0·5	36·9	+1·1	19·4	+1·0	28·2	+1·0	drops	— 6

* Port Sudan only.

L. J. SUTTON,
Director, Meteorological Service.

State of the River

Lake Albert at Butiaba rose 3 cms. during the month. Its level on January 1, 1940 was 6 cms. above the normal but 40 cms. below that of the corresponding day of last year.

The Bahr el Jebel at Mongalla fell slightly during the month. The levels were little below normal but much below those of last year.

The River Sobat at Nasser continued its fall more rapidly than the normal rate during the first three weeks of the month and slower thereafter. Its level which was about normal at the beginning of the month was 1.35 metres below it at the end. The levels on general were about 2.50 metres below those of last year.

The White Nile at Malakal fell almost normally during the first half of the month, but more rapidly during the second half owing to the rapid fall in River Sobat. Its level which was about normal at the beginning of the month was about 60 cms. below it at the end.

The Blue Nile at Roseires continued its regular fall during the whole month. The levels were well above normal but below those of last year. At Khartoum, the fall was however followed by a slight rise by the end of the first week of the month owing to the completion of filling Sennar Reservoir.

The River Atbara at Khashm el Girba fell about normal rate during the month. The levels were below both normal and last year's.

The Main Nile at Kajnarti fell with rather more than normal rate during the first fortnight, then remained almost steady for about a week and fell at normal rate thereafter to the end of the month. The levels were below both normal and last year's throughout. At Aswan the amount of water reached the reservoir was about 4,300 millions cubic metres during the month or a below both the normal and last year's supply.

The differences of the mean levels in December 1939 from those of December 1938 and from the normal 1906-35 were :—

STATION	MEAN DIFFERENCES OF LEVELS	
	December 1939 minus December 1938	December 1939 minus Normal
	Metre	Metre
Mongalla*	— 0·29	— 0·09
Nasser	— 2·56	— 0·95**
Malakal	— 0·71	— 0·16
Roseires	— 0·34	+ 0·37
Khartoum	— 0·45	— 0·25
Khashm el Girba	— 0·26	— 0·18
Kajnarti	— 0·72	— 0·29

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* Juba readings are under consideration, Mongalla adjacent gauge is taken instead.

** Nasser normal is for 1922-35 only.

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